IN THE COURT OF CRIMINAL APPEALS FOR THE STATE OF OKLAHOMA

MEGAN NICOLE HAMMERS, Appellant, v. THE STATE OF OKLAHOMA, Appellee.	)	No. F-2014-573

APPLICATION FOR SUPPLEMENTATION OF APPEAL RECORD AND FOR EVIDENTIARY HEARING ON CLAIM OF INEFFECTIVE ASSISTANCE OF TRIAL COUNSEL

COMES NOW Appellant, Megan Nicole Hammers, through her attorneys of record, pursuant to Rule 3.11(B)(3)(b), Rules of the Court of Criminal Appeals, Title 22, Ch. 18, App. (2013), and requests that this Court allow her to supplement the record and to allow an evidentiary hearing, based on ineffective assistance of trial counsel.

BRIEF IN SUPPORT OF APPLICATION

Proposition I of the Brief of Appellant (the "Brief"), which is filed contemporaneously herewith and incorporated herein, addresses the issue of ineffective assistance of trial counsel. *See, Dewberry v. State*, 1998 OK CR 10, 954 P.2d 774, 775-76. It is hereby requested that this Court allow supplementation of the appeal record with (A) Ms. Hammers' correspondence with trial counsel and Kent Bridge, Esq., (B) character evidence from Bill Buffington, M.D., who was available but was not called to testify for the defense at Ms. Hammers' trial, (C) statements from appellate counsel, Ms. Hammers, Charles Hammers, and Ben Hall, and (D) documents available during discovery containing information supportive of Ms. Hammers' trial defense. As required by the Rules of this Court, each item of evidence offered for supplementation is supported by an affidavit. The requested supplementation and hearing are essential to this Court's determination of the issue of ineffective assistance of trial counsel.

As discussed below, trial counsel's deficiencies were further demonstrated when counsel failed to call Dr. Buffington to testify at trial. Long before trial, Ms. Hammers had requested trial counsel to contact Dr. Buffington to discuss her case. This is confirmed by an e-mail Ms. Hammers sent to trial counsel roughly one year before trial, wherein she asked if counsel would be subpoenaing Dr. Buffington for trial. (Ex. p. 12)

B. Character evidence from Bill Buffington, M.D., who was available but was not called to testify at Ms. Hammers' trial.

Proposition I, Subsections 5 and 6, of the Brief, highlight trial counsel's ineffectiveness in failing to call Dr. Buffington as a witness to rebut the State's characterization of Ms. Hammers as a prescription drug abuser, and hearsay evidence that Dr. Buffington dismissed her as a patient because of the alleged drug abuse.

Trial counsel knew that Dr. Buffington would be a key witness at Ms. Hammers' trial. Not only did Ms. Hammers request trial counsel to contact Dr. Buffington long before trial, but the State had designated him as a trial witness.

In preparation for this appeal, appellate counsel contacted Dr. Buffington to discuss Ms. Hammers' case. (Ex. p. 1) Dr. Buffington attested to the following, by way of affidavit: (1) he never saw any signs of child abuse when Ms. Hammers' children were his patients; (2) Ms. Hammers was diligent as a mother, very caring, and pleasant to be around; (3) he prescribed Ms. Hammers narcotics for her pain; (4) he did not think Ms. Hammers was ever seeking drugs; (5) Ms. Hammers always stayed within the guidelines that he had established; (6) Ms. Hammers never exhibited adverse physical or mental symptoms from the medication; (7) he was never contacted by trial counsel, or any attorney representing Ms. Hammers prior to her trial; and (8) he was surprised that he was not called to testify on Ms. Hammers' behalf. (Ex. pp. 44-45)

Without doubt, Dr. Buffington's presence at Ms. Hammers' trial would have spoken volumes to the jury. Even more, Dr. Buffington's testimony would have invalidated the State's

trial strategy to label Ms. Hammers a drug abuser, and rebutted the hearsay evidence that he dismissed her as a patient for that reason.

C. Statements from appellate counsel, Ms. Hammers, Charles Hammers, and Ben Hall.

As required by the Rules of this Court, the statements addressed herein are supported by affidavits and crucial to this Court's determination of the issue of ineffective assistance of trial counsel.

In preparation for this appeal, appellate counsel requested trial counsel to provide her entire case file. (Ex. p. 1) Trial counsel subsequently provided her file and appellate counsel reviewed it accordingly. Trial counsel's file contained the State's discovery, which included Ms. Hammers' child's medical record documents. Neither the State's discovery nor trial counsel's file contained the diagnostic films from the child's x-rays, CT scans, and MRI performed at OU Children's Hospital. There were also no lab-bloodwork records found in the State's discovery and trial counsel's file.

In preparation for this appeal, appellate counsel interviewed Ms. Hammers, Charles Hammers, and Ben Hall. (Ex. p. 1) Each of the individuals had testified for the defense at trial. Thereafter, appellate counsel received a letter from Ms. Hammers in support of her arguments on appeal. (Ex. pp. 1-6) Appellate counsel has confirmed that the letter was written by Ms. Hammers. (Ex. p. 1) Ms. Hammers stated in the letter that she explained to trial counsel during their first meeting what she thought may have caused her child's injuries. Trial counsel assured Ms. Hammers that she would retain experts for Ms. Hammers' case. Trial counsel also told Ms. Hammers that she had experts in Kansas. Ms. Hammers hired trial counsel during the meeting.

Ms. Hammers also stated in the letter that she provided trial counsel multiple lists of witnesses throughout the course of counsel's representation. Ms. Hammers provided trial counsel a letter that Dr. Buffington had wrote supporting her[1], and requested counsel to

[1] Appellate counsel found the letter in trial counsel's case file, and has attached it hereto. (Ex. pp. 1, 41)

contact him to discuss her case. Ms. Hammers explained trial counsel's failure to communicate with her, failure to prepare her for trial, and failure to provide her child's medical records. Ms. Hammers explained trial counsel was aware that Ginger Woodhall, a certified nurse practitioner, was willing to review and discuss the medial records with Ms. Hammers.

Lastly, Ms. Hammers described trial counsel's decreased level of communication after Ms. Hammers had contacted Kent Bridge, Esq. Ms. Hammers also stated that trial counsel was made aware the year before trial that she intended on testifying.

Appellate counsel obtained an affidavit from Ms. Hammers' father, Charles Hammers. (Ex. pp. 1, 42) Charles Hammers explained that he and Ms. Hammers' mother had contacted trial counsel early during the case because they were concerned trial counsel was neglecting the case. Charles Hammers further explained that trial counsel threatened to drop the case if he and Ms. Hammers' mother ever contacted counsel again. Lastly, Charles Hammers stated that trial counsel never prepared Ms. Hammers' mother, sister, or him for trial.

Appellate counsel also obtained an affidavit from Ben Hall. (Ex. pp. 1, 43) Mr. Hall confirmed that he was present with Ms. Hammers during her first meeting with trial counsel. Mr. Hall also confirmed trial counsel had told Ms. Hammers that counsel would retain experts for her case; that counsel had experts in Kansas. Like Charles Hammers, Mr. Hall stated that trial counsel never prepared him for trial. Mr. Hall explained that he had later talked with Ms. Hammers about trial counsel's failure to prepare him for trial. Ms. Hammers told Ms. Hall that trial counsel had not prepared her as well. Moreover, trial counsel had told Ms. Hammers to disregard her explanations of her child's injuries right before counsel called her as a witness.

D. Documents available during discovery containing information supportive of Ms. Hammers' trial defense.

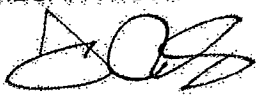
In preparation for this appeal, appellate counsel performed research of medical literature on the Internet and in medical and legal journals. Access to these sources is provided in the Brief of Appellant by hyperlink or by reference, in this motion by attachment.

As illustrated throughout Proposition I of the Brief, trial counsel failed to present relevant evidence and/or obtain the services of a defense expert, even for consultation. The medical findings, opinions, and case studies referenced in the Brief of Appellant, as well as those which are attached hereto (Ex. pp. 24-40), support the conclusion that the State's evidence, including expert testimony, could have been challenged in Ms. Hammers' trial. Moreover, Ms. Hammers' child's CT scan report, MRI report and discharge summary from OU Children's Hospital which are attached hereto (Ex. pp. 18-23) directly refute the State's contention that her child was injured by human shaking because he had no injury to his neck. *See*, Proposition I, Subsection 3, of the Brief. Failure to submit the State's case to adversarial testing denied Ms. Hammers of a fair trial and comprised ineffective assistance of trial counsel.

WHEREFORE, Appellant requests that this Court allow supplementation of the appeal record as requested, find at least a strong possibility trial counsel was ineffective for failing to identify and use the complained-of-evidence, and reverse the conviction or remand Appellant's case for an evidentiary hearing on the issue of ineffective assistance of trial counsel.

Respectfully submitted,

MEGAN NICOLE HAMMERS

By: 

TIMOTHY J. SYNAR
Oklahoma Bar No. 20862

5030 North May Ave. No. 161
Oklahoma City, OK 73107
(405) 308-9527
timsynar@gmail.com

-and

MARK K. BAILEY
Oklahoma Bar No. 19039

4811 Gaillardia Parkway, Ste. 110
Oklahoma City, Ok 73142
(405) 607-1177
markbailey.attorneyatlaw@gmail.com

ATTORNEYS FOR APPELLANT

CERTIFICATE OF SERVICE

This is to certify that on this 26 day of January, 2015, a true and correct copy of the foregoing Brief of Appellant was caused to be mailed via United States Postal Service, postage prepaid, to Appellant at the address set out below, and a copy was served upon the Attorney General this date by leaving a copy with the Clerk of the Court of Criminal Appeals for submission to the Attorney General.

TIMOTHY J. SYNAR

MEGAN HAMMERS # 693220
MABEL BASSETT CORRECTIONAL CENTER
29501 KICKAPOO RD.
MCLOUD, OKLAHOMA 74851

STATE OF OKLAHOMA)
) ss
COUNTY OF OKLAHOMA)

AFFIDAVIT OF TIMOTHY J. SYNAR

I, Timothy J. Synar, being of legal age and upon my oath, do solemnly state:

I am one of the appellate counsels representing Megan Nicole Hammers in Court of Criminal Appeals Case No. F-2014-573. In support of Ms. Hammers' Brief of Appellant and accompanying Motion pursuant to this Court's Rule 3.11 (B)(3)(b), Rules of the Court of Criminal Appeals, Title 22, Ch. 18, App. (2013) ("3.11 Motion"), I hereby state the following:

In support of Ms. Hammers' arguments on appeal, appellate counsel reviewed text-message and e-mail communications between Ms. Hammers and trial counsel, as well as those between Ms. Hammers and attorney, Kent Bridge. Relevant text messages and e-mails are attached to the 3.11 Motion as Ex., pp. 7-17.

In support of Ms. Hammers' arguments on appeal, appellate counsel obtained Ms. Hammers' entire case file from trial counsel, Ms. Renee Gish, and reviewed it in detail. The file contained the State's discovery, which included Ms. Hammers' child's medical record documents. Neither the State's discovery nor trial counsel's file contained the diagnostic films from the child's x-rays, CT Scans, and MRI performed at OU Children's. There were also no lab-bloodwork records found in the State's discovery and trial counsel's file. Relevant medical record documents that were provided are attached to the 3.11 Motion as Ex., pp. 18-23. Trial counsel's file also contained a letter written by Dr. Buffington that Ms. Hammers had provided counsel early during the case. That letter is attached to the 3.11 Motion as Ex., p. 41.

In support of Ms. Hammers' arguments on appeal, appellate counsel performed research of medical literature on the Internet and in medical and legal journals. Access to these sources is provided in the Brief of Appellant and 3.11 Motion by hyperlink, by reference, and/or by attachment. These include Ex., pp. 24-40.

In support of Ms. Hammers' arguments on appeal, appellate counsel obtained an affidavit from Bill Buffington, M.D., who was an available character witness for Ms. Hammers. Appellate counsel also obtained affidavits from Charles Hammers and Ben Hall, who testified for the defense at trial. These affidavits are attached to the 3.11 Motion as Ex., pp. 42-45.

On January 22, 2015, appellate counsel received from Ms. Hammers a letter she had written to this Court on June 20, 2015, in support of her arguments on appeal. Appellate counsel has confirmed that the letter was written by Ms. Hammers, a copy of which is attached hereto as Ex., pp. 3-6.

Further, affiant saith not.

TIMOTHY J. SYNAR OBA #20862

Subscribed and sworn to me on this 26th day of January, 2015.

M. JOLYN BAUER
Notary Public
State of Oklahoma
Commission # 10001779
My Commission Expires Mar 5, 2018

NOTARY PUBLIC

To The Court of Criminal Appeals, January 20, 201[illegible]

I was wrongly convicted of abusing my child on February 27, 2014.

I am now serving an 18-year sentence because my attorney, Renee Gish, failed to properly represent me. My fate now rests in your hands, and I pray that you see the unfairness that has occurred and allow me the opportunity to prove my innocence. Ms. Gish took that opportunity from me, and with that my entire life, being my two boys.

When I first met with Ms. Gish to discuss my case, she was attentive, confident, and assured me that she would do everything possible to fight the allegations that I abused my child. We discussed what I thought may have caused my child's injuries, and she agreed to look into it. Ms. Gish told me that the outcome of cases like mine depend on experts, but not to worry because she had some in Kansas. I left the meeting having hired Ms. Gish to defend me in this case, as well as the DHS case to fight for my children.

We had a preliminary hearing months later, and Ms. Grish seemed like she had prepared. She had told me earlier that we would lose the hearing, that was normal, but it was a good way to learn information. Right after the hearing, Ms. Grish told me again to not worry, that she had everything taken care of and would start preparing for trial.

Over the next year, I sent Ms. Grish multiple lists of witnesses that would support me at trial. I gave her the letter that my doctor, Bill Buffington, had wrote on my behalf and told her to contact him. In the DHS case they had claimed I was not a good mother and had been abusing the prescription medicine he had been prescribing me.

My trial was continued multiple times, but each Ms. Grish told me there was nothing that could be done about it, that it wasn't our fault. I worried that Ms. Grish wasn't telling me the truth and was not prepared. Ms. Grish started becoming more and more unresponsive

and would not explain things to me. I continued to ask her how the case was coming along, what she thought, and if we had experts. The times she actually responded, she would just tell me not to worry and everything would be okay.

I started to ask Ms. Gish repeatedly for my child's medical records because she would not explain things. I contacted a nurse practitioner, Ginger Woodall, who agreed to explain the medical records to me in order to be prepared for trial. I told Ms. Gish that I had contacted Ms. Woodall, but she still continued to ignore my requests.

Ms. Gish's lack of communication was so bad that my parents tried to contact her. This upset Ms. Gish a lot, and she told me she would drop my case if they contacted her again.

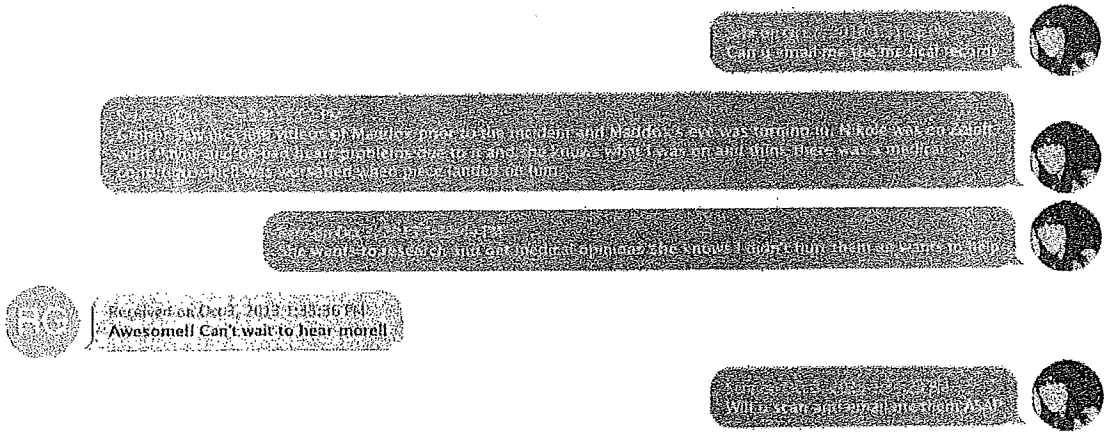
The last time my trial was continued was in January of 2014. I contacted Kent Bridge a few weeks later because

Ms. Gish continued to ignore me and not prepare me for trial. I told Mr. Bridge all of my concerns about Ms. Gish and he agreed to represent me, as long as he could get a continuance. Mr. Bridge contacted Ms. Gish to discuss my request, and after that Ms. Gish's communication decreased more.

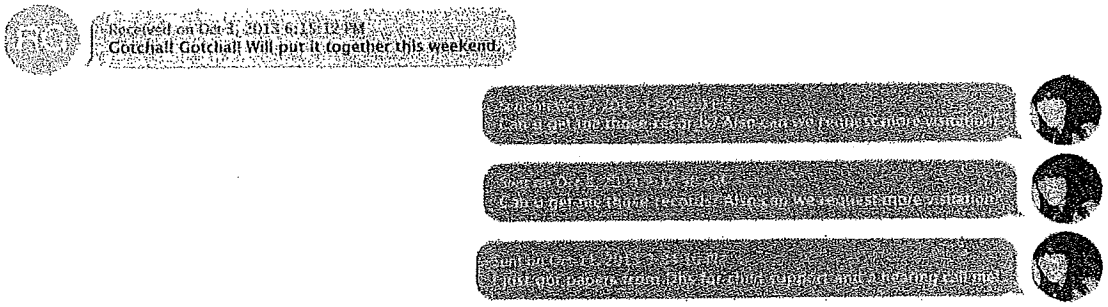
A couple of weeks later, the judge denied Mr Bridge's request to continue the trial. After that, Ms. Gish did not tell me about what she had prepared and planned for the trial. She knew that I intended on testifying the year before trial, but I never received my child's medical records. As it turned out, Ms. Gish and I both were unprepared for trial.

Respectfully,

Megan Hammers

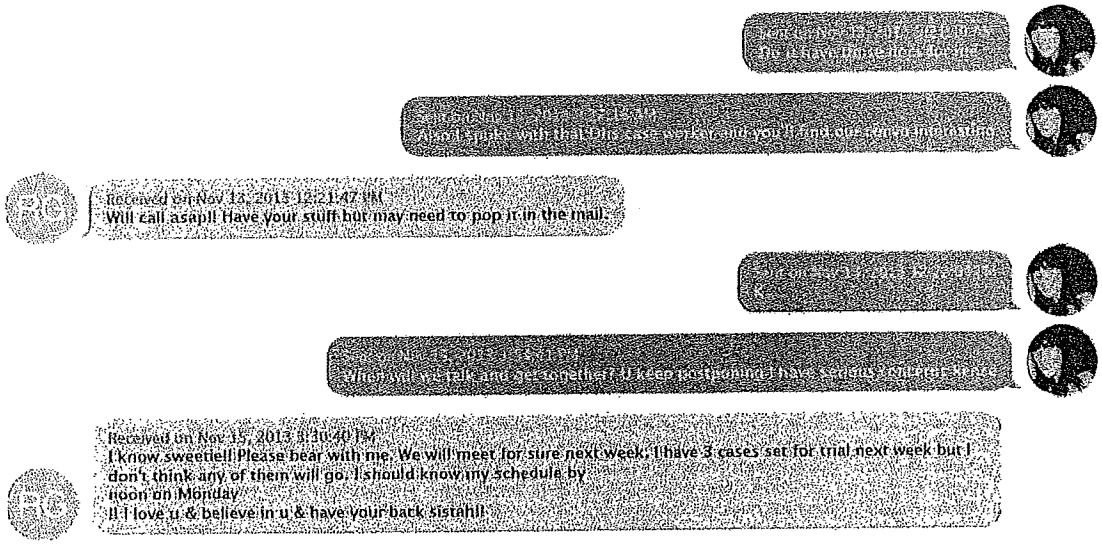

Received on Oct 3, 2013 1:13:56 PM
Awesome!! Can't wait to hear more!!

[...]


Received on Oct 3, 2013 6:15:12 PM
Gotcha!! Gotcha!! Will put it together this weekend.

[...]

[...]


Received on Nov 13, 2015 12:21:47 PM
Will call asap!! Have your stuff but may need to pop it in the mail.
Received on Nov 15, 2015 11:30:40 PM
I know sweetie!! Please bear with me. We will meet for sure next week. I have 3 cases set for trial next week but I don't think any of them will go. I should know my schedule by noon on Monday
II I love u & believe in u & have your back sistah!!

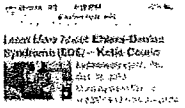
[...]

Received on Nov 25, 2013 1:13:22 PM
I am out of town for the next 2 weeks. Please text me your name and next court date to set up an appointment upon my return.

Received on Dec 30, 2013 10:26:07 AM
I need u to trust me, Don't have time to teach you how to try a case as well as prepare. Plz just trust me. You paid me a lot of money and I know what I'm doing!

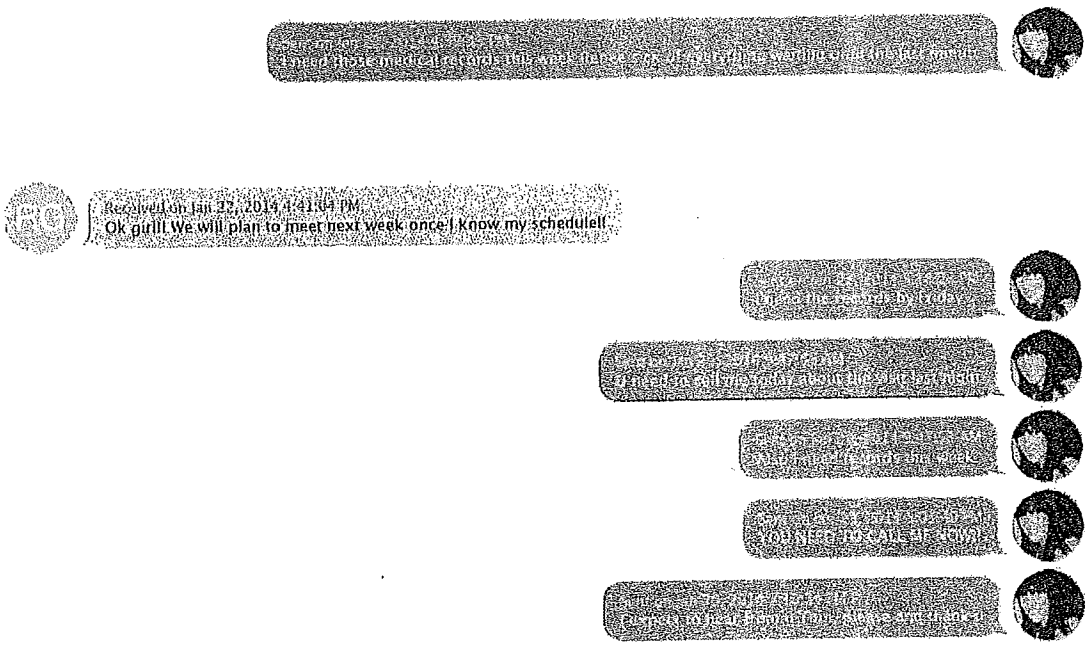
Received on Dec 30, 2013 10:27:44 AM
Good girl!! I will absolutely prep you for everything possible as things come up.

[...]

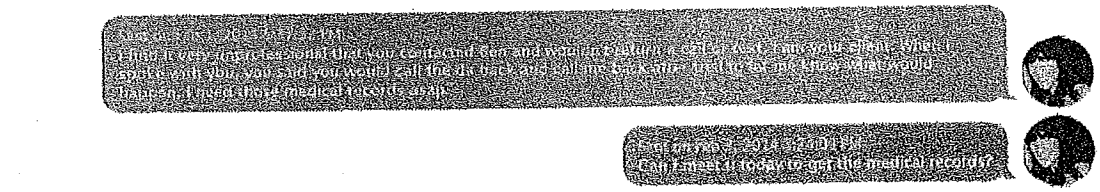


Received on Jan 13, 2014 2:34:51 PM
Ok

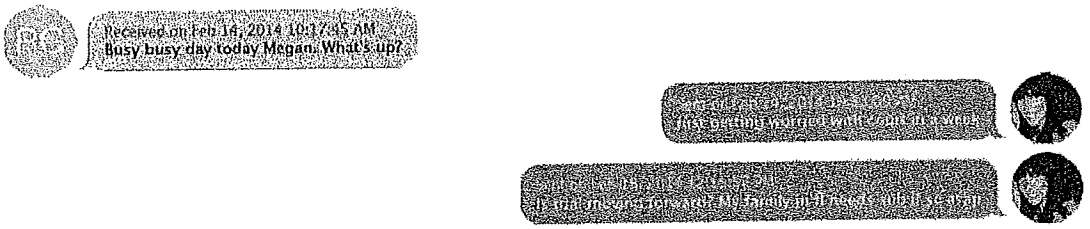
[...]



[...]



[...]



[...]

Gmail by Google

Megan Hammers <meghammers@gmail.com>

Witness List Subs

megan hammers <meghammers@gmail.com> Wed, Apr 17, 2013 at 5:02 PM
To: Rene Gish <myattorneyrgish@gmail.com>

Im double checking my timeline. The witness list has been updated. Those highlighted in green dont need subs, (Amy England Smith - might need one but shes in green). All the ones in yellow need subs.

The following are ready to fight, the remainder on the list you can decide or not to sub. I think we should sub them all, but your the boss.

Dawn Self
Amy England Smith
Jennifer Schultz
Jennifer Alexander
Kasey Gerber
Roxy Self
Jenny Rose
Justin Redwine
Barbara Phillips
Carrie Heinze Tomes
Christ Heinze
Shelly Hesby
Kim Black
Angie Myers
Sandy Ross

And of course Ben Hall, Dave Hall, Brenda & Charles Hammers, & Chelsea Hammers.

Also, will we be sub Dr. Buffington?

Ill send you my timeline in an hour max.

2 attachments

Witness List for Maddoxs Case.xlsx
17K

January 24.docx
17K

Gmail by Google

Megan Hammers <meghammers@gmail.com>

Call me please

Megan Hammers <meghammers@gmail.com> Wed, Dec 11, 2013 at 1:12 PM
To: Renee Gish <myattorneyrgish@gmail.com>

Will you please contact me I have tried getting in touch with you now for a few weeks. I have serious concerns.

Thank you,

Megan Hammers
Citadel Restoration
405-604-1964
megan@citadelok.com

Gmail by Google

Megan Hammers <meghammers@gmail.com>

???

Megan Hammers <meghammers@gmail.com> Mon, Dec 16, 2013 at 9:55 AM
To: Renee Gish <myattorneyrgish@gmail.com>

Are you ok? Trial is in a few weeks and I want it to go and not be delayed again. I've tried getting ahold of you for a few weeks now and have had no luck, I need answers.

Megan Hammers
Citadel Restoration
405-604-1964
megan@citadelok.com

Gmail by Google

Megan Hammers <meghammers@gmail.com>

You ok?

3 messages

Megan Hammers <meghammers@gmail.com> Wed, Dec 18, 2013 at 7:39 PM
To: Renee Gish <myattorneyrgish@gmail.com>

Hope all is well. Wondering if your still my attorney. Renee it would be nice to hear from you.

Megan Hammers
Citadel Restoration
405-604-1964
megan@citadelok.com
Megan Hammers
Citadel Restoration
405-604-1964
megan@citadelok.com

Rene Gish, Esq. <myattorneyrgish@gmail.com> Fri, Dec 20, 2013 at 8:48 AM
To: Megan Hammers <meghammers@gmail.com>

You are so silly!! Starting Monday I will only be working on your case until trial!!! Muah!!! Talk to u soon!!

Aloha! from Rene's iPhone
[Quoted text hidden]

Megan Hammers <meghammers@gmail.com> Fri, Dec 20, 2013 at 11:11 AM
To: "Rene Gish, Esq." <myattorneyrgish@gmail.com>

Whew u had me worried!!!! Ok talk to u soon

Megan Hammers
Citadel Restoration
405-604-1964
megan@citadelok.com

[Quoted text hidden]

Messages **Kent Bridge** Contact

iMessage
Fri, Feb 14, 8:38 AM

Hi Kent, it's Megan Hammers. I was wondering if you have spoke with Renee anymore, because I have not. Stressing a wee bit bc I go before Deason a week from today. If you have any time today to call me will u please. Thank you!

I will call you soon

K thank u so much

Text Message Send

Messages **Kent Bridge** Contact

Time today to call me will u please. Thank you!

I will call you soon

K thank u so much

Fri, Feb 14, 10:34 AM

Busy busy day today Megan. What's up?

Called her got no answer and she sent me the text above.

Ok I'll find something out

Text Message Send

11/15/2011 09:56 4052713052 OUMC

1200 N. Phillips
Oklahoma City, OK 73104

PHONE: (405) 271-5511
FAX: (405) 271-1718

CAT SCAN
CONSULTATION REPORT

LOC/RM: EU.8W/EU.8114
PT. TYPE: ADM IN
ACCT#: E00659362376

MRN: E002499963
[redacted], [redacted]
DOB: 06/09/2011 AGE: 06M 00D SEX: M

ORD PROVIDER: Williams MD,Robert S
ATT PROVIDER: Ferguson MD,Mark A
ADMISSION CLINICAL DATA: SUBDURAL HEMATOMA ET

EXAM STARTED: 12/09/11 1300
EXAM COMPLETED: 12/08/11 1320

EXAMS:
003283546 CT FACIAL BONES W/O CONTRAST
003283547 CT BRAIN WO CONTRAST

CPT:
70486
70450

CT brain and facial bones without contrast

History: Facial trauma which occurred 2 weeks ago.

Comparison: None.

Technique: Serial axial tomographic images of the brain and facial bones were obtained without the use of intravenous contrast. Additionally, multiplanar reformatted images of the facial bones were also provided for review.

Findings:

A focal area of increased attenuation is demonstrated along the convexity of the right frontal lobe at the vertex, posterior to the coronal suture (series 2, image 29 and 30). This finding is consistent with subacute subdural hemorrhage. The midline structures are nondisplaced. The ventricles and basilar cisterns are normal in size and configuration. There is no evidence of abnormal mass effect. The gray-white matter differentiation is maintained. The sulci have a normal configuration. The structures of the posterior fossa are unremarkable.

The orbits and their contents are unremarkable. The paranasal sinuses, mastoid air cells and middle ear cavities are clear. The osseous structures and overlying soft tissues of the skull and face are unremarkable.

Impression:

Focus of subacute subdural hemorrhage over the high right frontal lobe.

No acute facial bone trauma.

These findings were discussed with Dr. Reyna of the Children's ER at 1410 on December 8, 2011 .

****

I have viewed the images and/or data and approve the report.

(CONTINUED)

Signed Report Printed From PCI

11/15/2011 09:56 4052713032 CLINIC

1200 N. Phillips MAGNETIC RESONANCE IMAGING PHONE: (405) 271-7454
Oklahoma City, OK 73104 CONSULTATION REPORT FAX: (405) 271-2674

LOC/RM: EU.SW/EU.8114 MRN: E002499963
PT. TYPE: ADM IN [redacted], [redacted] DOB: [redacted]
ACCT#: E00639382376 DOB: 06/05/2011 AGE: 06M 01D SEX: M

ORD PROVIDER: Belt MD,Ernestine EXAM STARTED: 12/09/11 0800
ATT PROVIDER: Fergeson MD,Mark A EXAM COMPLETED: 12/09/11 0916
ADMISSION CLINICAL DATA: SUBDURAL HEMATOMA RT

EXAMS:	CPT:
003284012 MR BRAIN WO INF	70551
003284093 MR ORBIT WO INF	70540

MRI brain without contrast and MRI orbits without contrast dated 12/9/2011 dated Dec 09, 2011 09:16:00 AM .

COMPARISON: CT brain without contrast dated 12/8/2011

HISTORY: Subdural hematomas, rule out retinal hemorrhages and detachment

TECHNIQUE: Using a 1.5 tesla magnet multiplanar magnetic resonance imaging of the brain was performed without the administration of contrast. Pulse sequences obtained include:
Axial: T1, T2, gradient, diffusion weighted, proton density, FLAIR
Sagittal: T1
Coronal: Inversion recovery, T2
The following sequences were obtained for orbits. T2, T1 coronal; T1 and T2 axial; T1 sagittal.

FINDINGS:

No diffusion restriction is demonstrated to suggest acute ischemia or infarction. There are bilateral subdural fluid collections with no significant mass effect. The left subdural fluid collection demonstrates mildly hyperintense T1 signal and hyperintense T2 signal with few scattered areas of hyperintense T1 signal demonstrated within it. This measures 7 mm in its maximum thickness overlying the left frontal lobe. Susceptibility artifacts are also demonstrated within this subdural fluid collection, suggestive of blood degradation products. The right subdural fluid collection demonstrates predominantly isointense T1 signal with a few scattered areas of hyperintense T1 signal and hyperintense T2 signal. Susceptibility artifacts are also demonstrated within this subdural fluid collection which measures 7 mm in its maximum thickness overlying the right frontal lobe. The areas of hyperintense T1 signal demonstrate low T2 signal and are compatible with intracellular methemoglobin. No areas of susceptibility artifacts are demonstrated within the parenchyma of bilateral cerebral hemispheres. The myelination is age appropriate. The corpus callosum and septum pellucidum are present. The pituitary gland is present. The cerebellar tonsils are not low lying.

1200 E. Phillips
Oklahoma City, OK 73104

MAGNETIC RESONANCE IMAGING
CONSULTATION REPORT

PHONE: (405) 271-7654
FAX: (405) 271-2574

LOC/RM: EU.8W/EU.8114
PT. TYPE: ADM IN
ACCT#: E006599382376

MRN: E002499963
[redacted], M [redacted] DOB: 06/06/2011 AGE: 06M 01D SEX: M

ORD PROVIDER: Belt MD,Sarcastina
ATT PROVIDER: Ferguson MD,Mark A
ADMISSION CLINICAL DATA: SUBDURAL HEMATOMA ST

EXAM STARTED: 12/09/11 0800
EXAM COMPLETED: 12/09/11 0910

EXAMS:
003284012 MR BRAIN WO INJ
003284093 MR ORBIT WO INF
<Continued>

CPT:
70551
70540

There is no midline shift. Ventricular system and sulcation pattern are unremarkable. There is no significant mass effect. Basilar cisterns are preserved.

Flow void is present in major intracranial arterial and dural venous structures suggesting patency by T2 spin echo criteria. The sellar, parasellar and Meckel's cave regions are within normal limits. No evidence of calvarial or skull base marrow replacement. The mastoid air cells and middle ear cavities appear unremarkable. Mucosal thickening is demonstrated in the ethmoid sinuses.

There is a 0.8 cm excrescence arising from the skin in the right frontoparietal region. This is best demonstrated on image 21; series 501.

Bilateral lens and globes appear unremarkable with no evidence of susceptibility artifacts within the bilateral globes. The contour appears smooth with no evidence of membranes floating within the fibreous. The lens appear to be symmetric in position. The extraocular muscles appear symmetric and unremarkable bilaterally. Bilateral optic nerves appear symmetric. The optic chiasm appears unremarkable. The pituitary gland appears unremarkable.

IMPRESSION:

Bilateral subdural hematomas of mixed ages are demonstrated. There is no significant mass effect.

No evidence of intraparenchymal susceptibility artifacts to suggest intraparenchymal hemorrhages.

0.8 cm excrescence arising from the skin in the right frontoparietal region. Correlation with clinical exam is recommended.

Bilateral globes appear unremarkable with no evidence for retinal detachment. No evidence of susceptibility artifacts to suggest with no hemorrhage. Correlation with clinical exam is recommended.

1700 N. Phillips MAGNETIC RESONANCE IMAGING PHONE: (405) 271-7454
Oklahoma City, OK 73104 CONSULTATION REPORT FAX: (405) 271-2674

LOC/RM: EU.8W/EU.8114 MRN: E0024990S3
PT. TYPE: ADM IN [redacted]
ACCT#: E0063938237S DOB: 06/08/2011 AGE: 06M 01D SEX: M

RD PROVIDER: Belt MD,Ernestine EXAM STARTED: 12/09/11 0800
ATT PROVIDER: Ferguson MD,Mark A EXAM COMPLETED: 12/09/11 0816
ADMISSION CLINICAL DATA: SUBDURAL HEMATOMA RT

EXAMS:	CPT:
003254012 MR BRAIN WO INF	70551
003264095 MR ORBIT WO INF	70540

<Continued>

****

I have viewed the images and/or data and approve the report.

** Electronically Signed by D.O. 159 JACK R. LAKE **
** on 12/09/2011 at 1132 **
RESIDENT: ROY GEORGE JACOB, MD
Reported and signed by: JACK R. LAKE, D.O. 159

DICTATED: 12/09/2011 @ 1109 TRANSCRIBED: 12/09/11 @ 1128
TYPIST: RAD.VR PRINTED: 12/12/2011 @ 0952
ELECTRONIC SIGNATURE DATE/TIME: 12/09/2011 @ 1132 BATCH: 42226

OU MEDICAL CENTER (OUCPN)
Discharge Summary
REPORT #: 1213-0104
DATE: 12/13/11 Time: 1602

PATIENT: [redacted], [redacted] D[redacted] UNIT No: E002499863
ACCOUNT #: E0063938376 ROOM: 2U.8114
REPORT AUTHOR: Gables MD, Jennifer Erin

Discharge Summary

Discharge From:
SERVICE: Purple ATTENDING: Dr. Deleon

TO: PCP REFERRING PHYSICIAN: Fostering hope clinic

DATE OF ADMISSION: 12/08/11 DATE OF DISCHARGE: 12/13/11

ADMISSION DIAGNOSIS:
Concern for nonaccidental trauma with left eye esotropia

DISCHARGE DIAGNOSIS:
SUBDURAL HEMATOMAS, RETINAL HEMORRAGES, BILATERAL TIB/FIB SUBACUTE FRACTURES, R SUBACTE RADIAS/ULNA FRACTURE. CONCERN FOR NAT

CONSULTS: Ortho Neurosurgery Ophtho

Condition on Discharge: Good
Hospital Course:
Maddox a 6 mo male with no prior significant medical history who presented to the ER with concern of left eye crossing. He was admitted for strong suspicion of non accidental trauma. In the ER, the patient was evaluated by neurosurgery, opthalmology, and social services. CT head demonstrated a focus of subacute subdural hemorrhage over the high right frontal lobe with no fractures of the facial bones. Skeletal survey showed bilateral proximal subacute tib/fib fractures and a subacute right distal radius/ulna fracture. NES, evaluated the patient and recommended to get MRI brain W/O contrast to rule out SDH.Ophtho evaluation was a bilateral 6th nerve palsy, possible optic neuropathy, and retinal hemorrhage OD and recommended to get MRI Brain and orbits and coagulopathy blood work. MRI showed subacute subdural hematomas and no other findings. Was evaluated for bleeding disorders but PT/INR, PTT, and fibrinogen were WNL. CBC, CMP, and amylase/lipase were also WNL. NES was concerned for possibility of increase ICP with very firm and dialated anterior fontanelle. Did have q4h neuro checks during the duration of the stay that were WNL. Fontanelle became more pliable on hospital day 5 and repeat CT on hospital day 5 showed some resolution of the subdural hematomas. Bilateral esotropia showed small amounts of

Patient: [redacted], M[redacted] D[redacted] Unit#: E002499963
Date: 12/13/11 Acct#: 209639382376

improvement during his stay. Ophtho will follow as an outpatient. Ortho did not recommend any intervention for his fractures. NES would like a repeat CT as an outpatient. Maddox was fussy for the first few days but by discharge was very happy and playful in no acute distress. He was able to eat his full amount of maintanence requirment once his correct formula was provided. Clinically stable for discharge with normal VS.

Physical Exam (Pediatric)

General Well Hydrated, Fussy when first entered room, but easily consolable during exam

HEENT Moist Mucous Membrane, Normal facies, Esotropia of left eye, esotropia on the right that is not as profound, cannot track or the abduct on either side... Poor response to light, not equal bilaterally, Poor eye tracking. anterior fontanelle is wide and firm. Anterior fontanelle is softer today, but still generous in size with some suture separation

Respiratory Normal Breath Sounds, No Respiratory Distress, No Accessory Muscle Use

Cardiovascular No Edema, No Gallop, NJVD, No Murmur, Regular Rate/Rhythm

Abdominal Normal Bowel Sounds, No Organomegaly, No Pulsatile Mass, Non Tender, Soft

Extremities Normal Range of Motion, Normal Capillary Refill, Non Tender

Musculoskeletal Normal

Neurological normal tone, Left eye not reponsive to light, poor eye tracking.

Dermatology/Mucous Membrane Normal, maculopapular rash to abdomen and arms. erythema and crusting to nares bilaterally.

Results Pending at discharge:
None

Procedures/Complications:
Had MRI with contrast under sedation

Activity/Restrictions/Woundcare:
Normal activity ad lib

Diet:
Normal

Discharge Medications:
None

Discharge Followup:
Neurosurgery to call foster family with date for CT and appointment
Ophtho Dec 15th at 1200
Fostering hope clinic (general peds) 12/16 at 3:15

Electronic Prescriptions:
Note: This list includes only new prescriptions given at discharge. For a complete list of medications to take, refer to the discharge medications form

Electronically Signed by Cabler MD,Jennifer Erin on 12/13/11 at 1633

RPT #: 1313-0104
END OF REPORT

The American Journal of Forensic Medicine and Pathology 22(1):1–12, 2001.

Fatal Pediatric Head Injuries Caused by Short-Distance Falls

John Plunkett, M.D.

Physicians disagree on several issues regarding head injury in infants and children, including the potential lethality of a short-distance fall, a lucid interval in an ultimately fatal head injury, and the specificity of retinal hemorrhage for inflicted trauma. There is scant objective evidence to resolve these questions, and more information is needed. The objective of this study was to determine whether there are witnessed or investigated fatal short-distance falls that were concluded to be accidental. The author reviewed the January 1, 1988 through June 30, 1999 United States Consumer Product Safety Commission database for head injury associated with the use of playground equipment. The author obtained and reviewed the primary source data (hospital and emergency medical services' records, law enforcement reports, and coroner or medical examiner records) for all fatalities involving a fall.

The results revealed 18 fall-related head injury fatalities in the database. The youngest child was 12 months old, the oldest 13 years. The falls were from 0.6 to 3 meters (2–10 feet). A noncaretaker witnessed 12 of the 18, and 12 had a lucid interval. Four of the six children in whom funduscopic examination was documented in the medical record had bilateral retinal hemorrhage. The author concludes that an infant or child may suffer a fatal head injury from a fall of less than 3 meters (10 feet). The injury may be associated with a lucid interval and bilateral retinal hemorrhage.

Key Words: Child abuse—Head injury—Lucid interval—Retinal hemorrhage—Subdural hematoma.

Many physicians believe that a simple fall cannot cause serious injury or death (1–9), that a lucid interval does not exist in an ultimately fatal pediatric head injury (7–13), and that retinal hemorrhage is highly suggestive if not diagnostic for inflicted trauma (7,12,14–21). However, several have questioned these conclusions or urged caution when interpreting head injury in a child (15,22–28). This controversy exists because most infant injuries occur in the home (29,30), and if there is history of a fall, it is usually not witnessed or is seen only by the caretaker. Objective data are needed to resolve this dispute. It would be helpful if there were a database of fatal falls that were witnessed or wherein medical and law enforcement investigation unequivocally concluded that the death was an accident.

The United States Consumer Product Safety Commission (CPSC) National Injury Information Clearinghouse uses four computerized data sources (31). The National Electronic Injury Surveillance System (NEISS) file collects current injury data associated with 15,000 categories of consumer products from 101 U.S. hospital emergency departments, including 9 pediatric hospitals. The file is a probability sample and is used to estimate the number and types of consumer product–related injuries each year (32). The Death Certificate (DC) file is a demographic summary created by information provided to the CPSC by selected U.S. State Health Departments. The Injury/Potential Injury Incident (IR) file contains summaries, indexed by consumer product, of reports to the CPSC from consumers, medical examiners and coroners (Medical Examiner and Coroner Alert Project [MECAP]), and newspaper accounts of product-related incidents discovered by local or regional CPSC staff (33). The In-Depth Investigations (AI) file contains summaries of investigations performed by CPSC staff based on reports received from the NEISS, DC, or IR files (34). The AI files provide details about the incident from victim and witness interviews, accident reconstruction, and review of law enforce-

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ment, health care facility, and coroner or medical examiner records (if a death occurred).

METHODS

I reviewed the CPSC, DC, IR, and AI files for all head and neck injuries involving playground equipment recorded by the CPSC from January 1, 1988 through June 30, 1999. There are 323 entries in the playground equipment IR file, 262 in the AI file, 47 in the DC file, and more than 75,000 in the NEISS file. All deaths in the NEISS file generated an IR or AI file. If the file indicated that a death had occurred from a fall, I obtained and reviewed each original source record from law enforcement, hospitals, emergency medical services (EMS), and coroner or medical examiner offices except for one autopsy report. However, I discussed the autopsy findings with the pathologist in this case.

RESULTS

There are 114 deaths in the Clearinghouse database, 18 of which were due to head injury from a fall. The following deaths were excluded from this study: those that involved equipment that broke or collapsed, striking a person on the head or neck (41); those in which a person became entangled in the equipment and suffocated or was strangled (45), those that involved equipment or incidents other than playground (6 [including a 13.7-meter fall from a homemade Ferris wheel and a 3-meter fall from a cyclone fence adjacent to a playground]); and falls in which the death was caused exclusively by neck (carotid vessel, airway, or cervical spinal cord) injury (4).

The falls were from horizontal ladders (4), swings (7), stationary platforms (3), a ladder attached to a slide, a "see-saw", a slide, and a retaining wall. Thirteen occurred on a school or public playground, and five occurred at home. The database is not limited to infants and children, but a 13-year-old was the oldest fatality (range, 12 months–13 years; mean, 5.2 years; median, 4.5 years). The distance of the fall, defined as the distance of the closest body part from the ground at the beginning of the fall, could be determined from CPSC or law enforcement reconstruction and actual measurement in 10 cases and was 0.6 to 3.0 meters (mean, 1.3 ± 0.77; median, 0.9). The distance could not be accurately determined in the seven fatalities involving swings and one of the falls from a horizontal ladder, and may have been from as little as 0.6 meters to as much as 2.4 meters. The maximum height for a fall from a swing was assumed to be the highest point of the arc. Twelve of the 18 falls were witnessed by a noncaretaker or were videotaped; 12 of the children had a lucid interval (5 minutes–48 hours); and 4 of the 6 in whom funduscopic examination was performed had bilateral retinal hemorrhage (Table 1).

CASES

Case 1

This 12-month-old was seated on a porch swing between her mother and father when the chain on her mother's side broke and all three fell sideways and backwards 1.5 to 1.8 meters (5–6 feet) onto decorative rocks in front of the porch. The mother fell first, then the child, then her father. It is not known if her father landed on top of her or if she struck only the ground. She was unconscious immediately. EMS was called; she was taken to a local hospital; and was ictal and had decerebrate posturing in the emergency room. She was intubated, hyperventilated, and treated with mannitol. A computed tomography (CT) scan indicated a subgaleal hematoma at the vertex of the skull, a comminuted fracture of the vault, parafalcine subdural hemorrhage, and right parietal subarachnoid hemorrhage. There was also acute cerebral edema with effacement of the right frontal horn and compression of the basal cisterns. She had a cardiopulmonary arrest while the CT scan was being done and could not be resuscitated.

Case 2

A 14-month-old was on a backyard "see-saw" and was being held in place by his grandmother. The grandmother said that she was distracted for a moment and he fell backward, striking the grass-covered ground 0.6 meters (22.5 inches) below the plastic seat. He was conscious but crying, and she carried him into the house. Within 10 to 15 minutes he became lethargic and limp, vomited, and was taken to the local hospital by EMS personnel. He was unconscious but purposefully moving all extremities when evaluated, and results of funduscopic examination were normal. A CT scan indicated an occipital subgaleal hematoma, left-sided cerebral edema with complete obliteration of the left frontal horn, and small punctate hemorrhages in the left frontal lobe. There was no fracture or subdural hematoma. He was treated with mannitol; his level of consciousness rapidly improved; and he was extubated. However, approximately 7 hours after admission he began to have difficulty breathing, both pupils suddenly dilated, and he was rein-

TABLE 1. *Summary of cases*

No.	CPSC No.	Age	Sex	Fall from	Distance M/F	Witnessed	Lucid interval	Retinal hemorrhage	Subdural hemorrhage	Autopsy	Cause of death	FP
1	DC 9108013330	12 mos	F	Swing	1.5–1.8/5.0–6.0	No	No	N/R	Yes +IHF	No	Complex calvarial fracture with edema and contusions	No
2	AI 890208HBC3088	14 mos	M	See-saw	0.6/2.0	No	10–15 minutes	No	No	No	Malignant cerebral edema with herniation	No
3	IR F910368A	17 mos	F	Swing	1.5–1.8/5.0–6.0	No	No	N/R	Yes +IHF	Yes	Acute subdural hematoma with secondary cerebral edema	Yes
4	AI 921001HCC2263	20 mos	F	Platform	1.1/3.5	No	5–10 minutes	Bilateral multilayered	Yes +IHF	Limited	Occipital fracture with subdural/subarachnoid hemorrhage progressing to cerebral edema and herniation	Yes
5[a]	DC 9312060661	23 mos	F	Platform	0.70/2.3	Yes	10 minutes	Bilateral, NOS	Yes	Yes	Acute subdural hematoma	Yes
6	DC 9451016513	26 mos	M	Swing	0.9–1.8/3.0–6.0	Yes	No	Bilateral multilayered	Yes +IHF	Yes	Subdural hematoma with associated cerebral edema	Yes
7[a]	AI 891215HCC2094	3 yrs	M	Platform	0.9/3.0	Yes	10 minutes	N/R	Yes	No	Acute cerebral edema with herniation	No
8	AI 910515HCC2182	3 yrs	F	Ladder	0.6/2.0	yes	15 minutes	N/R	Yes (autopsy only)	Yes	Complex calvarial fracture, contusions, cerebral edema with herniation	Yes
9	DC 9253024577	4 yrs	M	Slide	2.1/7.0	Yes	3 hours	N/R	No	Yes	Epidural hematoma	Yes
10	AI 920710HWE4014	5 yrs	M	Horizontal ladder	2.1/7.0	No	No	N/R	Yes	No	Acute subdural hematoma with acute cerebral edema	Yes
11	AI 960517HCC5175	6 yrs	M	Swing	0.6–2.4/2.0–8.0	No	10 minutes	No	Yes +IHF	No	Acute subdural hematoma	Yes
12	AI 970324HCC3040	6 yrs	M	Horizontal ladder	3.0/10.0	Yes	45 minutes	N/R	No	No	Malignant cerebral edema with herniation	Yes
13	AI 881229HCC3070	6 yrs	F	Horizontal ladder	0.9/3.0	Yes	1+ hour	N/R	Yes +IHF	Yes	Subdural and subarachnoid hemorrhage, cerebral infarct, and edema	Yes
14	AI 930930HWE5025	7 yrs	M	Horizontal ladder	1.2–2.4/4.0–8.0	Yes	48 hours	N/R	No	Yes	Cerebral infarct secondary to carotid/vertebral artery thrombosis	Yes
15	AI 970409HCC1096	8 yrs	F	Retaining wall	0.9/3.0	Yes	12+ hours	N/R	Yes (autopsy only)	Yes	Acute subdural hematoma	Yes
16	AI 890621HCC3195	10 yrs	M	Swing	0.9–1.5/3.0–5.0	Yes	10 minutes	Bilateral multilayered	Yes	Yes	Acute subdural hematoma contiguous with an AV malformation	No
17	AI 920428HCC1671	12 yrs	F	Swing	0.9–1.8/3.0–6.0	Yes	No	N/R	No	Yes	Occipital fracture with extensive contra-coup contusions	Yes
18	AI 891016HCC1511	13 yrs	F	Swing	0.6–1.6/2.0–6.0	Yes	No	N/R	Yes +IHF	Yes	Occipital fracture, subdural hemorrhage, cerebral edema	Yes

[a]The original CT scan for case #7 and the soft tissue CT windows for case #5 could not be located and were unavailable for review.

CPSC, Consumer Products Safety Commission; AI, accident investigation; IR, incident report; DC, death certificate; M, male; F, female; Distance, the distance of the closest body part from the ground at the start of the fall (see text); M/F, meters/feet; Witnessed, witnessed by a noncaretaker or videotaped; N/R, not recorded; IHF, including interhemispheric or falx; FP, forensic pathologist–directed death investigation system.

tubated. A second CT scan demonstrated progression of the left hemispheric edema despite medical management, and he was removed from life support 22 hours after admission.

Case 3

This 17-month-old had been placed in a baby carrier–type swing attached to an overhead tree limb at a daycare provider's home. A restraining bar held in place by a snap was across her waist. She was being pushed by the daycare provider to an estimated height of 1.5 to 1.8 meters (5–6 feet) when the snap came loose. The child fell from the swing on its downstroke, striking her back and head on the grassy surface. She was immediately unconscious and apneic but then started to breathe spontaneously. EMS took her to a pediatric hospital. A CT scan indicated a large left-sided subdural hematoma with extension to the interhemispheric fissure anteriorly and throughout the length of the falx. The hematoma was surgically evacuated, but she developed malignant cerebral edema and died the following day. A postmortem examination indicated symmetrical contusions on the buttock and midline posterior thorax, consistent with impact against a flat surface; a small residual left-sided subdural hematoma; cerebral edema with anoxic encephalopathy; and uncal and cerebellar tonsillar herniation. There were no cortical contusions.

Case 4

A 20-month-old was with other family members for a reunion at a public park. She was on the platform portion of a jungle gym when she fell from the side and struck her head on one of the support posts. The platform was 1.7 meters (67 inches) above the ground and 1.1 meters (42 inches) above the top of the support post that she struck. Only her father saw the actual fall, although there were a number of other people in the immediate area. She was initially conscious and talking, but within 5 to 10 minutes became comatose. She was taken to a nearby hospital, then transferred to a tertiary-care facility. A CT scan indicated a right occipital skull fracture with approximately 4-mm of depression and subarachnoid and subdural hemorrhage along the tentorium and posterior falx. Funduscopic examination indicated extensive bilateral retinal and preretinal hemorrhage. She died 2 days later because of uncontrollable increased intracranial pressure. A limited postmortem examination indicated an impact subgaleal hematoma overlying the fracture in the mid occiput.

Case 5

A 23-month-old was playing on a plastic gym set in the garage at her home with her older brother. She had climbed the attached ladder to the top rail above the platform and was straddling the rail, with her feet 0.70 meters (28 inches) above the floor. She lost her balance and fell headfirst onto a 1-cm (⅜-inch) thick piece of plush carpet remnant covering the concrete floor. She struck the carpet first with her outstretched hands, then with the right front side of her forehead, followed by her right shoulder. Her grandmother had been watching the children play and videotaped the fall. She cried after the fall but was alert and talking. Her grandmother walked/carried her into the kitchen, where her mother gave her a baby analgesic with some water, which she drank. However, approximately 5 minutes later she vomited and became stuporous. EMS personnel airlifted her to a tertiary-care university hospital. A CT scan indicated a large right-sided subdural hematoma with effacement of the right lateral ventricle and minimal subfalcine herniation. (The soft tissue windows for the scan could not be located and were unavailable for review.) The hematoma was immediately evacuated. She remained comatose postoperatively, developed cerebral edema with herniation, and was removed from life support 36 hours after the fall. Bilateral retinal hemorrhage, not further described, was documented in a funduscopic examination performed 24 hours after admission. A postmortem examination confirmed the right frontal scalp impact injury. There was a small residual right subdural hematoma, a right parietal lobe contusion (secondary to the surgical intervention), and cerebral edema with cerebellar tonsillar herniation.

Case 6

A 26-month-old was on a playground swing being pushed by a 13-year-old cousin when he fell backward 0.9 to 1.8 meters (3–6 feet), striking his head on hard-packed soil. The 13-year-old and several other children saw the fall. He was immediately unconscious and was taken to a local emergency room, then transferred to a pediatric hospital. A CT scan indicated acute cerebral edema and a small subdural hematoma adjacent to the anterior interhemispheric falx. A funduscopic examination performed 4 hours after admission indicated extensive bilateral retinal hemorrhage, vitreous hemorrhage in the left eye, and papilledema. He had a subsequent cardiopulmonary arrest and could not be resuscitated. A postmortem examination confirmed the retinal hemorrhage and indicated a right parietal scalp impact injury but no calvarial frac-

ture, a "film" of bilateral subdural hemorrhage, cerebral edema with herniation, and focal hemorrhage in the right posterior midbrain and pons.

Case 7

This 3-year-old with a history of TAR (thrombocytopenia–absent radius) syndrome was playing with other children on playground equipment at his school when he stepped through an opening in a platform. He fell 0.9 meters (3 feet) to the hard-packed ground, striking his face. A teacher witnessed the incident. He was initially conscious and able to walk. However, approximately 10 minutes later he had projectile vomiting and became comatose, was taken to a local hospital, and subsequently transferred to a pediatric hospital. A CT scan indicated a small subdural hematoma and diffuse cerebral edema with uncal herniation, according to the admission history and physical examination. (The original CT report and scan could not be located and were unavailable for review.) His platelet count was 24,000/mm^3, and he was treated empirically with platelet transfusions, although he had no evidence for an expanding extra-axial mass. Resuscitation was discontinued in the emergency room.

Case 8

This 3-year-old was at a city park with an adult neighbor and four other children, ages 6 to 10. She was standing on the third step of a slide ladder 0.6 meters (22 inches) above the ground when she fell forward onto compact dirt, striking her head. The other children but not the adult saw the fall. She was crying but did not appear to be seriously injured, and the neighbor picked her up and brought her to her parents' home. Approximately 15 minutes later she began to vomit, and her mother called EMS. She was taken to a local emergency room, then transferred to a pediatric hospital. She was initially lethargic but responded to hyperventilation and mannitol; she began to open her eyes with stimulation and to spontaneously move all extremities and was extubated. However, she developed malignant cerebral edema on the second hospital day and was reintubated and hyperventilated but died the following day. A postmortem examination indicated a subgaleal hematoma at the vertex of the skull associated with a complex fracture involving the left frontal bone and bilateral temporal bones. There were small epidural and subdural hematomas (not identifiable on the CT scan), bilateral "contra-coup" contusions of the inferior surfaces of the frontal and temporal lobes, and marked cerebral edema with uncal herniation.

Case 9

A 4-year-old fell approximately 2.1 meters (7 feet) from a playground slide at a state park, landing on the dirt ground on his buttock, then falling to his left side, striking his head. There was no loss of consciousness, but his family took him to a local emergency facility, where an evaluation was normal. However, he began vomiting and complained of left neck and head pain approximately 3 hours later. He was taken to a second hospital, where a CT scan indicated a large left parietal epidural hematoma with a midline shift. He was transferred to a pediatric hospital and the hematoma was evacuated, but he developed malignant cerebral edema with right occipital and left parietal infarcts and was removed from the respirator 10 days later. A postmortem examination indicated a small residual epidural hematoma, marked cerebral edema, bilateral cerebellar tonsillar and uncal herniation, and hypoxic encephalopathy. There was no identifiable skull fracture.

Case 10

A 5-year-old was apparently walking across the horizontal ladder of a "monkey bar," part of an interconnecting system of homemade playground equipment in his front yard, when his mother looked out one of the windows and saw him laying face down on the ground and not moving. The horizontal ladder was 2.1 meters (7 feet) above compacted dirt. EMS were called, he was taken to a local hospital, and then transferred to a pediatric hospital. A CT scan indicated a right posterior temporal linear fracture with a small underlying epidural hematoma, a 5-mm thick acute subdural hematoma along the right temporal and parietal lobes, and marked right-sided edema with a 10-mm midline shift. He was hyperventilated and treated with mannitol, but the hematoma continued to enlarge and was surgically evacuated. However, he developed uncontrollable cerebral edema and was removed from life support 10 days after the fall.

Case 11

A 6-year-old was on a playground swing at a private lodge with his 14-year-old sister. His sister heard a "thump," turned around, and saw him on the grass-covered packed earth beneath the swing. The actual fall was not witnessed. The seat of the swing was 0.6 meters (2 feet) above the ground, and the fall distance could have been from as high as 2.4 meters (8 feet). He was initially conscious and talking but within 10 minutes became comatose and was taken to a local emergency room, then transferred to a tertiary-care hospital. A CT

scan indicated a large left frontoparietal subdural hematoma with extension into the anterior interhemispheric fissure and a significant midline shift with obliteration of the left lateral ventricle. There were no retinal hemorrhages. He was treated aggressively with dexamethasone and hyperventilation, but there was no surgical intervention. He died the following day.

Case 12

This 6-year-old was at school and was sitting on the top crossbar of a "monkey bar" approximately 3 meters (10 feet) above compacted clay soil when an unrelated noncaretaker adult saw him fall from the crossbar to the ground. He landed flat on his back and initially appeared to have the wind knocked out of him but was conscious and alert. He was taken to the school nurse who applied an ice pack to a contusion on the back of his head. He rested for approximately 30 minutes in the nurse's office and was being escorted back to class when he suddenly collapsed. EMS was called, and he was transported to a pediatric hospital. He was comatose on admission, the fundi could not be visualized, and a head CT scan was interpreted as normal. However, a CT scan performed the following morning approximately 20 hours after the fall indicated diffuse cerebral edema with effacement of the basilar cisterns and fourth ventricle. There was no identifiable subdural hemorrhage or calvarial fracture. He developed transtentorial herniation and died 48 hours after the fall.

Case 13

This 6-year-old was playing on a school playground with a 5th grade student/friend. She was hand-over-hand traversing the crossbar of a "monkey bar" 2.4 meters (7 feet 10 inches) above the ground with her feet approximately 1 meter (40 inches) above the surface. She attempted to slide down the pole when she reached the end of the crossbar but lost her grip and slid quickly to the ground, striking the compacted dirt first with her feet, then her buttock and back, and finally her head. The friend informed the school principal of the incident, but the child seemed fine and there was no intervention. She went to a relative's home for after-school care approximately 30 minutes after the fall, watched TV for a while, then complained of a headache and laid down for a nap. When her parents arrived at the home later that evening, 6 hours after the incident, they discovered that she was incoherent and "drooling." EMS transported her to a tertiary-care medical center. A CT scan indicated a right parieto-occipital skull fracture, subdural and subarachnoid hemorrhage, and a right cerebral hemisphere infarct. The infarct included the posterior cerebral territory and was thought most consistent with thrombosis or dissection of a right carotid artery that had a persistent fetal origin of the posterior cerebral artery. She remained comatose and was removed from the respirator 6 days after admission. A postmortem examination indicated superficial abrasions and contusions over the scapula, a prominent right parietotemporal subgaleal hematoma, and a right parietal skull fracture. She had a 50-ml subdural hematoma and cerebral edema with global hypoxic or ischemic injury ("respirator brain"), but the carotid vessels were normal.

Case 14

A 7-year-old was on the playground during school hours playing on the horizontal ladder of a "monkey bar" when he slipped and fell 1.2 to 2.4 meters (4–8 feet). According to one witness, he struck his forehead on the bars of the vertical ladder; according to another eyewitness he struck the rubber pad covering of the asphalt ground. There are conflicting stories as to whether he had an initial loss of consciousness. However, he walked back to the school, and EMS was called because of the history of the fall. He was taken to a local hospital, where evaluation indicated a Glasgow coma score of 15 and a normal CT scan except for an occipital subgaleal hematoma. He was kept overnight for observation because of the possible loss of consciousness but was released the following day. He was doing homework at home 2 days after the fall when his grandmother noticed that he was stumbling and had slurred speech, and she took him back to the hospital. A second CT scan indicated a left carotid artery occlusion and left temporal and parietal lobe infarcts. The infarcts and subsequent edema progressed; he had brainstem herniation; and he was removed from life support 3 days later (5 days after the initial fall). A postmortem examination indicated ischemic infarcts of the left parietal, temporal, and occipital lobes, acute cerebral edema with herniation, and thrombosis of the left vertebral artery. Occlusion of the carotid artery, suspected premortem, could not be confirmed.

Case 15

This 8-year-old was at a public playground near her home with several friends her age. She was hanging by her hands from the horizontal ladder of a "monkey bar" with her feet approximately 1.1 meters (3.5 feet) above the ground when she attempted to swing from the bars to a nearby 0.9-

meter (34-inch) retaining wall. She landed on the top of the wall but then lost her balance and fell to the ground, either to a hard-packed surface (one witness) or to a 5.1-cm (2-inch) thick resilient rubber mat (a second witness), striking her back and head. She initially cried and complained of a headache but continued playing, then later went home. Her mother said that she seemed normal and went to bed at her usual time. However, when her mother tried to awaken her at approximately 8:30 the following morning (12 hours after the fall) she complained of a headache and went back to sleep. She awoke at 11 a.m. and complained of a severe headache then became unresponsive and had a seizure. EMS took her to a nearby hospital, but she died in the emergency room. A postmortem examination indicated a right temporoparietal subdural hematoma, extending to the base of the brain in the middle and posterior fossae, with flattening of the gyri and narrowing of the sulci. (The presence or absence of herniation is not described in the autopsy report.) There was no calvarial fracture, and there was no identifiable injury in the scalp or galea.

Case 16

A 10-year-old was swinging on a swing at his school's playground during recess when the seat detached from the chain and he fell 0.9 to 1.5 meters (3–5 feet) to the asphalt surface, striking the back of his head. The other students but not the three adult playground supervisors saw him fall. He remained conscious although groggy and was carried to the school nurse's office, where an ice pack was placed on an occipital contusion. He suddenly lost consciousness approximately 10 minutes later, and EMS took him to a local hospital. He had decerebrate posturing when initially evaluated. Funduscopic examination indicated extensive bilateral confluent and stellate, posterior and peripheral preretinal and subhyaloid hemorrhage. A CT scan showed a large acute right frontoparietal subdural hematoma with transtentorial herniation. The hematoma was surgically removed, but he developed malignant cerebral edema and died 6 days later. A postmortem examination indicated a right parietal subarachnoid AV malformation, contiguous with a small amount of residual subdural hemorrhage, and cerebral edema with anoxic encephalopathy and herniation. There was no calvarial fracture.

Case 17

A 12-year-old was at a public playground with a sister and another friend and was standing on the seat of a swing when the swing began to twist. She lost her balance and fell 0.9 to1.8 meters (3–6 feet) to the asphalt surface, striking her posterior thorax and occipital scalp. She was immediately unconscious and was taken to a tertiary-care hospital emergency room, where she was pronounced dead. A postmortem examination indicated an occipital impact injury associated with an extensive comminuted occipital fracture extending into both middle cranial fossa and "contra-coup" contusions of both inferior frontal and temporal lobes.

Case 18

This 13-year-old was at a public playground with a friend. She was standing on the seat of a swing with her friend seated between her legs when she lost her grip and fell backwards 0.6 to 1.8 meters (2–6 feet), striking either a concrete retaining wall adjacent to the playground or a resilient 5.1-cm (2 inch) thick rubber mat covering the ground. She was immediately unconscious and was given emergency first aid by a physician who was nearby when the fall occurred. She was taken to a nearby hospital and was purposefully moving all extremities and had reactive pupils when initially evaluated. A CT scan indicated interhemispheric subdural hemorrhage and generalized cerebral edema, which progressed rapidly to brain death. A postmortem examination indicated a linear nondepressed midline occipital skull fracture, subdural hemorrhage extending to the occiput, contusion of the left cerebellar hemisphere, bifrontal "contra-coup" contusions, and cerebral edema.

DISCUSSION

General

Traumatic brain injury (TBI) is caused by a force resulting in either strain (deformation/unit length) or stress (force/original cross-sectional area) of the scalp, skull, and brain (35–37). The extent of injury depends not only on the level and duration of force but also on the specific mechanical and geometric properties of the cranial system under loading (38–40). Different parts of the skull and brain have distinct biophysical characteristics, and calculating deformation and stress is complex. However, an applied force causes the skull and brain to move, and acceleration, the time required to reach peak acceleration, and the duration of acceleration may be measured at specific locations (36,41). These kinematic parameters do not cause the actual brain damage but are useful for analyzing TBI because they are easy to quantify. Research in TBI using physical models and animal experiments has shown that a force resulting in angular acceleration pro-

duces primarily diffuse brain damage, whereas a force causing exclusively translational acceleration produces only focal brain damage (36). A fall from a countertop or table is often considered to be exclusively translational and therefore assumed incapable of producing serious injury (3,7–9). However, sudden impact deceleration *must* have an angular vector unless the force is applied only through the center of mass (COM), and deformation of the skull during impact *must* be accompanied by a volume change (cavitation) in the subdural "space" tangential to the applied force (41). The angular and deformation factors produce tensile strains on the surface veins and mechanical distortions of the brain during impact and may cause a subdural hematoma without deep white matter injury or even unconsciousness (42–44).

Many authors state that a fall from less than 3 meters (10 feet) is rarely if ever fatal, especially if the distance is less than 1.5 meters (5 feet) (1–6,8,9). The few studies concluding that a short-distance fall may be fatal (22–24,26,27) have been criticized because the fall was not witnessed or was seen only by the caretaker. However, isolated reports of observed fatal falls and biomechanical analysis using experimental animals, adult human volunteers, and models indicate the potential for serious head injury or death from as little as a 0.6-meter (2-foot) fall (48–52). There are limited experimental studies on infants (cadaver skull fracture) (53,54) and none on living subadult nonhuman primates, but the adult data have been extrapolated to youngsters and used to develop the Hybrid II/III and Child Restraint–Air Bag Interaction (CRABI) models (55) and to propose standards for playground equipment (56,63). We simply do not know either kinematic or nonkinematic limits in the pediatric population (57,58).

Each of the falls in this study exceeded established adult kinematic thresholds for traumatic brain injury (41,48–52). Casual analysis of the falls suggests that most were primarily translational. However, deformation and *internal* angular acceleration of the skull and brain *caused by the impact* produce the injury. What happens during the impact, not during the fall, determines the outcome.

Subdural Hemorrhage

A "high strain" impact (short pulse duration and high rate for deceleration onset) typical for a fall is more likely to cause subdural hemorrhage than a "low strain" impact (long pulse duration and low rate for deceleration onset) that is typical of a motor vehicle accident (42,61). The duration of deceleration for a head-impact fall against a nonyielding surface is usually less than 5 milliseconds (39,59–61). Experimentally, impact duration longer than 5 milliseconds will not cause a subdural hematoma unless the level of angular acceleration is above 1.75×10^5 rad/s^2 (61). A body in motion with an angular acceleration of 1.75×10^5 rad/s^2 has a tangential acceleration of 17,500 m/s^2 at 0.1 meters (the distance from the midneck axis of rotation to the midbrain COM in the Duhaime model). A human cannot produce this level of acceleration by impulse ("shake") loading (62).

An injury resulting in a subdural hematoma in an infant may be caused by an accidental fall (43,44,64). A recent report documented the findings in seven children seen in a pediatric hospital emergency room after an accidental fall of 0.6 to 1.5 meters who had subdural hemorrhage, no loss of consciousness, and no symptoms (44). The characteristics of the hemorrhage, especially extension into the posterior interhemispheric fissure, have been used to suggest if not confirm that the injury was nonaccidental (9,62,65–68). The hemorrhage extended into the posterior interhemispheric fissure in 5 of the 10 children in this study (in whom the blood was identifiable on CT or magnetic resonance scans and the scans were available for review) and along the anterior falx or anterior interhemispheric fissure in an additional 2 of the 10.

Lucid Interval

Disruption of the diencephalic and midbrain portions of the reticular activating system (RAS) causes unconsciousness (36,69,70). "Shearing" or "diffuse axonal" injury (DAI) is thought to be the primary biophysical mechanism for immediate traumatic unconsciousness (36,71). Axonal injury has been confirmed at autopsy in persons who had a brief loss of consciousness after a head injury and who later died from other causes, such as coronary artery disease (72). However, if unconsciousness is momentary or brief ("concussion") subsequent deterioration *must* be due to a mechanism other than DAI. Apnea and catecholamine release have been suggested as significant factors in the outcome following head injury (73,74). In addition, the centripetal theory of traumatic unconsciousness states that primary disruption of the RAS will not occur in isolation and that structural brainstem damage from inertial (impulse) or impact (contact) loading *must* be accompanied by evidence for cortical and subcortical damage (36). This theory has been validated by magnetic resonance imaging and CT scans in adults and children (75,76). Only one of the children in this study (case 6) had evidence for any component of DAI. This child had focal hemor-

rhage in the posterior midbrain and pons, thought by the pathologist to be primary, although there was no skull fracture, only "a film" of subdural hemorrhage, no tears in the corpus callosum, and no lacerations of the cerebral white matter (grossly or microscopically).

The usual cause for delayed deterioration in infants and children is cerebral edema, whereas in adults it is an expanding extra-axial hematoma (77). If the mechanism for delayed deterioration (except for an expanding extra-axial mass) is venospasm, cerebral edema may be the only morphologic marker. The "talk and die or deteriorate (TADD)" syndrome is well characterized in adults (78). Two reports in the pediatric literature discuss TADD, documenting 4 fatalities among 105 children who had a lucid interval after head injury and subsequently deteriorated (77,79). Many physicians believe that a lucid interval in an ultimately fatal pediatric head injury is extremely unlikely or does not occur unless there is an epidural hematoma (7,8,11). Twelve children in this study had a lucid interval. A noncaretaker witnessed 9 of these 12 falls. One child had an epidural hematoma.

Retinal Hemorrhage

The majority of published studies conclude that retinal hemorrhage, especially if bilateral and posterior or associated with retinoschisis, is highly suggestive of, if not diagnostic for, nonaccidental injury (9,14–21). Rarely, retinal hemorrhage has been associated with an accidental head injury, but in these cases the bleeding was unilateral (80). It is also stated that traumatic retinal hemorrhage may be the direct mechanical effect of violent shaking (15). However, retinal hemorrhage may be caused experimentally either by ligating the central retinal vein or its tributaries or by suddenly increasing intracranial pressure (81,82); retinoschisis is the result of breakthrough bleeding and venous stasis not "violent shaking" (15,83). Any sudden increase in intracranial pressure may cause retinal hemorrhage (84–87). Deformation of the skull coincident to an impact nonselectively increases intracranial pressure. Venospasm secondary to traumatic brain injury selectively increases venous pressure. Either mechanism may cause retinal hemorrhage irrespective of whether the trauma was accidental or inflicted. Further, retinal and optic nerve sheath hemorrhages associated with a ruptured vascular malformation are due to an increase in venous pressure not extension of blood along extravascular spaces (81–83,88). Dilated eye examination with an indirect ophthalmoscope is thought to be more sensitive for detecting retinal bleeding than routine examination and has been recommended as part of the evaluation of any pediatric patient with head trauma (89). None of the children in this study had a formal retinal evaluation, and only six had funduscopic examination documented in the medical record. Four of the six had bilateral retinal hemorrhage.

Pre-existing Conditions

One of these children (case 16) had a subarachnoid AV malformation that contributed to development of the subdural hematoma, causing his death. One (case 7) had TAR syndrome (90), but his death was thought to be caused by malignant cerebral edema not an expanding extra-axial mass.

Cerebrovascular Thrombosis

Thrombosis or dissection of carotid or vertebral arteries as a cause of delayed deterioration after head or neck injuries is documented in both adults and children (91,92). Case 14 is the first report of a death due to traumatic cerebrovascular thrombosis in an infant or child. Internal carotid artery thrombosis was suggested radiographically in an additional death (case 13) but could not be confirmed at autopsy. However, this child died 6 days after admission to the hospital, and fibrinolysis may have removed any evidence for thrombosis at the time the autopsy was performed.

Limitations

1. Six of the 18 falls were not witnessed or were seen only by the adult caretaker, and it is possible that another person caused the nonobserved injuries.
2. The exact height of the fall could be determined in only 10 cases. The others (7 swing and 1 stationary platform) could have been from as little as 0.6 meters (2 feet) to as much as 2.4 meters (8 feet).
3. A minimum impact velocity sufficient to cause fatal brain injury cannot be inferred from this study. Likewise, the probability that an individual fall will have a fatal outcome cannot be stated because the database depends on voluntary reporting and contractual agreements with selected U.S. state agencies. The NEISS summaries for the study years estimated that there were more than 250 deaths due to head and neck injuries associated with playground equipment, but there are only 114 in the files. Further, this study does not include other nonplayground equipment–related fatal falls, witnessed or not witnessed, in the CPSC database (32).

CONCLUSIONS

1. Every fall is a complex event. There must be a biomechanical analysis for any incident in which the severity of the injury appears to be inconsistent with the history. The question is not "Can an infant or child be seriously injured or killed from a short-distance fall?" but rather "If a child falls (x) meters and strikes his or her head on a nonyielding surface, what will happen?"
2. Retinal hemorrhage may occur whenever intracranial pressure exceeds venous pressure or whenever there is venous obstruction. The characteristic of the bleeding cannot be used to determine the ultimate cause.
3. Axonal damage is unlikely to be the mechanism for lethal injury in a low-velocity impact such as from a fall.
4. Cerebrovascular thrombosis or dissection must be considered in any injury with apparent delayed deterioration, and especially in one with a cerebral infarct or an unusual distribution for cerebral edema.
5. A fall from less than 3 meters (10 feet) in an infant or child may cause fatal head injury and may not cause immediate symptoms. The injury may be associated with bilateral retinal hemorrhage, and an associated subdural hematoma may extend into the interhemispheric fissure. A history by the caretaker that the child may have fallen cannot be dismissed.

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APPENDIX

Newtonian mechanics involving constant acceleration may be used to determine the impact velocity in a gravitational fall. However, constant acceleration formulas cannot be used to calculate the relations among velocity, acceleration, and distance traveled *during* an impact because the deceleration is not uniform (45). This analysis requires awareness of the shape of the deceleration curve, knowledge of the mechanical properties and geometry of the cranial system, and comprehension of the stress and strain characteristics for the specific part of the skull and brain that strikes the ground. A purely translational fall requires that the body is rigid and that the external forces acting on the body pass only through the COM, i.e., there is no rotational component. A 1-meter-tall 3-year-old hanging by her knees from a horizontal ladder with the vertex of her skull 0.5 meters above hard-packed earth approximates this model. If she looses her grip and falls, striking the occipital scalp, her impact velocity is 3.1 m/second. An exclusively angular fall also requires that the body is rigid. In addition, the rotation must be about a fixed axis or a given point internal or external to the body, and the applied moment and the inertial moment must be at the identical point or axis. If this same child has a 0.5-meter COM and has a "matchstick" fall while standing on the ground, again striking her occiput, her angular velocity is 5.42 rad/second and tangential velocity 5.42 m/second at impact. The impact velocity is higher than predicted for an exclusively translational or external-axis angular fall when the applied moment and the inertial moment are at a different fixed point (slip and fall) or when the initial velocity is not zero (walking or running, then trip and fall), and the vectors are additive. However, the head, neck, limbs, and torso do not move uniformly during a fall because relative motion occurs with different velocities and accelerations for each component. Calculation of the impact velocity for an actual fall requires solutions of differential equations for each simultaneous translational and rotational motion (45). Further, inertial or impulse loading (whiplash) may cause head acceleration more than twice that of the midbody input force and may be important in a fall where the initial impact is to the feet, buttock, back, or shoulder, and the final impact is to the head (46,47).

The translational motion of a rigid body at constant gravitational acceleration (9.8 m/s^2) is calculated from:

$$F = ma \qquad v^2 = 2as \qquad v = at$$

where F = the sum of all forces acting on the body (newton), m = mass (kg), a = acceleration (m/s^2), v = velocity (m/s), s = distance (m), and t = time (s).

The angular motion of a rigid body about a fixed axis at a given point of the body under constant gravitational acceleration (9.8 m/s^2) is calculated from:

$$M = I\alpha \qquad \omega = v^t/r \qquad \alpha = a^t/r$$

where M = the applied moment about the COM or about the fixed point where the axis of rotation is located, I = the inertial moment about this same COM or fixed point, α = angular acceleration (rad/s^2), ω = angular velocity (rad/s), r = radius (m), v^t = tangential velocity (m/s), and a^t = tangential acceleration (m/s^2).

The angular velocity ω for a rigid body of length L rotating about a fixed point is calculated from:

$$\tfrac{1}{2} I_0 \omega^2 = maL/2 \qquad I_0 = (1/3)\, mL^2$$

where I_0 = the initial inertial moment, ω = angular velocity (rad/s), m = mass (kg), a = gravitational acceleration (9.8 m/s^2), and L = length.

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National Electronic Injury Surveillance System (NEISS)

Sample Case Detail

Glossary

PSU = Primary Sampling Unit (Hospital) Weight = Statistical Weight
Stratum = Size/type of hospital (S= Small, M=Medium, L=Large, V=Very Large, C=Children's Hospital)

Back Print

Total Records: 7

CPSC Case #: 30439296 **Treatment Date:** 04/20/2003 **PSU:** 100 **Weight:** 77.803 **Stratum:** M
Age: 209 - 9 MONTHS **Sex:** 1 - MALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 57 - FRACTURE **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE INVOLVEMENT
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: WALKER COLLAPSED ONTO CHILD DX: FRACTURE TO LEG

CPSC Case #: 30609730 **Treatment Date:** 04/12/2003 **PSU:** 8 **Weight:** 6.1043 **Stratum:** C
Age: 208 - 8 MONTHS **Sex:** 2 - FEMALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 64 - STRAIN, SPRAIN **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 0 - UNKNOWN **Fire Involvement:** 0 - NO FIRE INVOLVEMENT
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: PATIENT CAUGHT LEG IN WALKER, LEG TWISTED, LEG SPRAIN

CPSC Case #: 30749325 **Treatment Date:** 07/20/2003 **PSU:** 24 **Weight:** 77.803 **Stratum:** M
Age: 2 - 2 YEARS **Sex:** 1 - MALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 64 - STRAIN, SPRAIN **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 9 - SPORTS OR RECREATION PLACE **Fire Involvement:** 0 - NO FIRE INVOLVEMENT
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: FALL FROM JUMPER LEG STRAIN

CPSC Case #: 30840102 **Treatment Date:** 08/20/2003 **PSU:** 89 **Weight:** 69.1931 **Stratum:** L
Age: 214 - 14 MONTHS **Sex:** 1 - MALE **Race:** 0 - N.S. **Race Other:**
Diagnosis: 53 - CONTUSION OR ABRASION **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 0 - UNKNOWN **Fire Involvement:** 0 - NO FIRE INVOLVEMENT
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: CHILD WALKING IN WALKER 2 DAYS AGO AND HIT ANKLE. NOW FAVORING LEG. D: LEG CONTUSION.

CPSC Case #: 30847720 **Treatment Date:** 08/10/2003 **PSU:** 24 **Weight:** 77.803 **Stratum:** M
Age: 207 - 7 MONTHS **Sex:** 2 - FEMALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 57 - FRACTURE **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE INVOLVEMENT
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: SEEMED FINE AT SITTER'S WHILE JUMPING IN BABY JUMPER, LATER NO WEIGHT BEARING ON LEG FX TIBIA

CPSC Case #: 30908594 **Treatment Date:** 08/30/2003 **PSU:** 90 **Weight:** 6.1043 **Stratum:** C
Age: 210 - 10 MONTHS **Sex:** 2 - FEMALE **Race:** 3 - OTHER **Race Other:**
Diagnosis: 57 - FRACTURE **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE INVOLVEMENT
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: PT WAS IN WALKER, WALKER COLLAPSED WHILE CHILD IN WALKER NOW PT NOT MOVING LEFT LEG. . DX LEFT TIBIA / FIBULA FX.

National Electronic Injury Surveillance System (NEISS)

Sample Case Detail

Glossary

. PSU = Primary Sampling Unit (Hospital) Weight = Statistical Weight
Stratum = Size/type of hospital (S= Small, M=Medium, L=Large, V=Very Large, C=Children's Hospital)

Back Print

Total Records: 6

CPSC Case #: 60125397 **Treatment Date:** 01/15/2006 **PSU:** 21 **Weight:** 15.4988 **Stratum:** V
Age: 211 - 11 MONTHS **Sex:** 1 - MALE **Race:** 0 - N.S. **Race Other:**
Diagnosis: 71 - OTHER OR NOT STATED **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: WALKER COLLAPSED&FELL ON LEG " LEG INJ"

CPSC Case #: 60405591 **Treatment Date:** 03/23/2006 **PSU:** 101 **Weight:** 86.8812 **Stratum:** M
Age: 210 - 10 MONTHS **Sex:** 2 - FEMALE **Race:** 0 - N.S. **Race Other:**
Diagnosis: 59 - LACERATION **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: WHILE PT WAS IN WALKER AT HOME DOG BIT LEGS. DX: LACERATION LEGS

CPSC Case #: 60635082 **Treatment Date:** 06/10/2006 **PSU:** 10 **Weight:** 5.3759 **Stratum:** C
Age: 213 - 13 MONTHS **Sex:** 1 - MALE **Race:** 3 - OTHER **Race Other:**
Diagnosis: 71 - OTHER OR NOT STATED **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: HURT RIGHT FOOT; FOOT MAY HAVE GOTTEN STUCK IN THE WALKER. D: CONTUSI ON RIGHT LEG; INSECT BITES

CPSC Case #: 60832515 **Treatment Date:** 08/07/2006 **PSU:** 37 **Weight:** 5.3759 **Stratum:** C
Age: 2 - 2 YEARS **Sex:** 1 - MALE **Race:** 0 - N.S. **Race Other:**
Diagnosis: 57 - FRACTURE **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: IN BABY JUMPER WHEN HE EXLEG

CPSC Case #: 61137639 **Treatment Date:** 11/11/2006 **PSU:** 37 **Weight:** 6.1438 **Stratum:** C
Age: 3 - 3 YEARS **Sex:** 2 - FEMALE **Race:** 0 - N.S. **Race Other:**
Diagnosis: 53 - CONTUSION OR ABRASION **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: IN BABY JUMPER WHEN SHE FELL INJURED LEG DX: CONTUSION

CPSC Case #: 61142080 **Treatment Date:** 11/24/2006 **PSU:** 98 **Weight:** 71.3515 **Stratum:** S
Age: 208 - 8 MONTHS **Sex:** 1 - MALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 71 - OTHER OR NOT STATED **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: BABY WAS IN WALKER AND STARTED CRYING, MOM STATES LEGS TURNED BLACK QUESTIONABLE LEG PAIN

National Electronic Injury Surveillance System (NEISS)

Sample Case Detail

Glossary

PSU = Primary Sampling Unit (Hospital) Weight = Statistical Weight
Stratum = Size/type of hospital (S= Small, M=Medium, L=Large, V=Very Large, C=Children's Hospital)

Back Print

Total Records: 8

CPSC Case #: 70239346 **Treatment Date:** 02/10/2007 **PSU:** 31 **Weight:** 5.4609 **Stratum:** C
Age: 208 - 8 MONTHS **Sex:** 1 - MALE **Race:** 3 - OTHER **Race Other:**
Diagnosis: 57 - FRACTURE **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: PULLED OUT OF WALKER BY BABYSITTER AND LEG GOT STUCK. DX FX TIBIA

CPSC Case #: 70507853 **Treatment Date:** 04/23/2007 **PSU:** 90 **Weight:** 6.241 **Stratum:** C
Age: 210 - 10 MONTHS **Sex:** 1 - MALE **Race:** 3 - OTHER **Race Other:**
Diagnosis: 57 - FRACTURE **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: PT MAY HAVE TWISTED LT LEG WHILE IN A WALKER. AT HOME, REFUSES TO BEAR WT. ON IT. DX: LT TIBIA FRACTURE

CPSC Case #: 70535056 **Treatment Date:** 05/07/2007 **PSU:** 37 **Weight:** 5.4609 **Stratum:** C
Age: 209 - 9 MONTHS **Sex:** 1 - MALE **Race:** 0 - N.S. **Race Other:**
Diagnosis: 57 - FRACTURE **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 9 - SPORTS OR RECREATION PLACE **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: PT. IN WALKER AT PARK WHEN OLDER KIDS TIPPED OVER WALKER AND IT FELL ON PT. AND LEG STUCK UNDERNEATH DX: LEG FX

CPSC Case #: 70731547 **Treatment Date:** 06/03/2007 **PSU:** 40 **Weight:** 15.1766 **Stratum:** V
Age: 222 - 22 MONTHS **Sex:** 1 - MALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 71 - OTHER OR NOT STATED **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: PATIENT FELL YESTERDAY OFF A JUMPER AND HAS HAD PAIN IN THE KNEE FAVOR- ING THE RIGHT LEG. DX-RIGHT LEG INJURY

CPSC Case #: 70736045 **Treatment Date:** 06/24/2007 **PSU:** 8 **Weight:** 5.4609 **Stratum:** C
Age: 209 - 9 MONTHS **Sex:** 1 - MALE **Race:** 2 - BLACK/AFRICAN AMERICAN **Race Other:**
Diagnosis: 71 - OTHER OR NOT STATED **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: PATIENT USING NEW WALKER AT HOME, HAS NOT BEEN BEARING WEIGHT ON LEG SI NCE YESTERDAY, MAY HAVE TWISTED LEG IN WALKER; LEG PAIN

CPSC Case #: 70819739 **Treatment Date:** 07/22/2007 **PSU:** 24 **Weight:** 80.0746 **Stratum:** M
Age: 5 - 5 YEARS **Sex:** 2 - FEMALE **Race:** 3 - OTHER **Race Other:**
Diagnosis: 57 - FRACTURE **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: FELL IN JUMPER DX: FX DIS. FIBULA

CPSC Case #: 71132497 Treatment Date: 11/04/2007 PSU: 20 Weight: 6.241 Stratum: C
Age: 218 - 18 MONTHS Sex: 1 - MALE Race: 3 - OTHER Race Other:
Diagnosis: 64 - STRAIN, SPRAIN Diag Other:
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME Fire Involvement: 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: STRAINED LOWER LEG WHEN CAUGHT IN BABY JUMPER

CPSC Case #: 71227818 Treatment Date: 12/11/2007 PSU: 18 Weight: 6.241 Stratum: C
Age: 208 - 8 MONTHS Sex: 1 - MALE Race: 0 - N.S. Race Other:
Diagnosis: 57 - FRACTURE Diag Other:
Body Part: 36 - LOWER LEG
Disposition: 4 - TREATED & ADMITTED FOR HOSPITALIZATION, HOSPITALIZED
Location: 1 - HOME Fire Involvement: 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: @ AUNTS IN WALKER PROPELLING AROUND KITCHEN, WALKER HIT ACCIDENTLY BY U NCLE-WALKER BROKE AND COLLAPSED, FX TIBIA

National Electronic Injury Surveillance System (NEISS)

Sample Case Detail

Glossary

PSU = Primary Sampling Unit (Hospital) Weight = Statistical Weight
Stratum = Size/type of hospital (S= Small, M=Medium, L=Large, V=Very Large, C=Children's Hospital)

Back Print

Total Records: 3

CPSC Case #: 90429664 **Treatment Date:** 04/09/2009 **PSU:** 8 **Weight:** 6.026 **Stratum:** C
Age: 203 - 3 MONTHS **Sex:** 2 - FEMALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 71 - OTHER OR NOT STATED **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 0 - UNKNOWN **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS, 1558 - BABY BOUNCER SEATS (EXCL. JUMPERS)
Narrative: PATIENT WAS IN A WALKER OR BOUNCER X15 MIN, NOW HAS LOWER LEG SWELLING, SWELLING, NO INJURY

CPSC Case #: 90621487 **Treatment Date:** 05/25/2009 **PSU:** 24 **Weight:** 75.3912 **Stratum:** M
Age: 2 - 2 YEARS **Sex:** 2 - FEMALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 71 - OTHER OR NOT STATED **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: WAS IN BOUNCER, INJURED LEG DX: BILAT LOWER LEG PAIN

CPSC Case #: 91233087 **Treatment Date:** 12/15/2009 **PSU:** 61 **Weight:** 15.3491 **Stratum:** V
Age: 206 - 6 MONTHS **Sex:** 2 - FEMALE **Race:** 1 - WHITE **Race Other:**
Diagnosis: 64 - STRAIN, SPRAIN **Diag Other:**
Body Part: 36 - LOWER LEG
Disposition: 1 - TREATED & RELEASED, OR EXAMINED & RELEASED WITHOUT TRTMNT
Location: 1 - HOME **Fire Involvement:** 0 - NO FIRE OR NO FLAME/SMOKE SPREAD
Products: 1508 - BABY WALKERS OR JUMPERS
Narrative: PT WITH LOWER LEG SPRAIN FROM USING BABY JUMPER

EDMOND
a.m. Clinic

Re: Megan Hammers

To Whom It May Concern,

Ms. Hammers has been a patient with this clinic for over a year. Her son Ethan "Pierce" Bryant has been seen for almost a year and Maddux Bryant has been seen here since birth. Ms. Hammers has always seemed to be very attentive to her children and brought them for their regular appointments for immunizations and well child checks. She also brings them in for any illnesses that are not quickly resolved at home. The two boys are always well dressed, clean and interact well with her. Pierce is hyperactive but is well liked by the staff and is able to be distracted with some attention and toys.

No signs of abuse were ever seen in the children by me at this clinic.

Sincerely,

Bill Buffington, MD

Bill Buffington, M.D.
Medical Director
Edmond AM Clinic

405-216-3993 | FAX 405-216-3992 | 1714 S. Kelly | Edmond, Oklahoma 73013

STATE OF OKLAHOMA)
) ss
COUNTY OF OKLAHOMA)

AFFIDAVIT OF CHARLES HAMMERS

I, Charles Hammers, being of legal age and upon my oath, do solemnly state:

I am the father of the Appellant, Megan Nicole Hammers.

Early on in my daughter's defense, her mother and I attempted to contact her attorney, Ms. Renee Gish, multiple times due to our growing concern that Ms. Gish was neglecting her case. Ms. Gish responded by contacting and threatening my daughter if we ever contacted her again she would drop the case. It seemed like my daughter walked on egg-shells around Ms. Gish from that point forward, and the conflict between the two continued to increase.

Shortly before trial, my daughter informed me that Ms. Gish still was not communicating with her about what Ms. Gish had planned for trial. Ms. Gish had also not provided my daughter with her son's medical records, even though she knew my daughter had someone that was willing to review and explain them to her. Because of this, my daughter sought out another attorney to represent her, but the Judge did not allow that attorney to try her case.

My daughter's mother (Brenda Hammers), sister (Chelsea Hammers), and I attended the trial. Ms. Gish called all of us as witnesses, but never did she prepare us prior to the trial. We did not know what we would be asked, no clue what to expect.

Further, affiant saith not.

CHARLES HAMMERS

Subscribed and sworn to me on this 25th day of January, 2015.

NOTARY PUBLIC

(SEAL) ELISE MURLIN NOTARY PUBLIC # 11006214 EXP. 07/12/15 STATE OF OKLAHOMA

STATE OF OKLAHOMA)
) ss
COUNTY OF OKLAHOMA)

AFFIDAVIT OF BEN HALL

I, Ben Hall, being of legal age and upon my oath, do solemnly state:

I am well acquainted with the Appellant, Megan Hammers, and her two boys. I have also come to know Megan's attorney, Renee Gish, during the time she represented Megan.

On or around Thanksgiving 2011, I witnessed Megan's 6 month-old boy take a knee to his head when Megan's older boy was running and fell on him. Megan's younger boy suffered an abrasion to his nose and facial bruising.

I have also witnessed on multiple occasions Megan's older boy playing too rough with her younger boy, such as when he was in his baby jumper.

During the middle part of 2012, Megan and I met with Ms. Gish to discuss Megan's criminal case. This was Megan's first meeting with Ms. Gish. During the meeting, Megan told Ms. Gish that she believed her younger boy was injured during the fall and that he may have also been injured by her older boy playing rough with him while in the baby jumper. Ms. Gish told Megan that she would retain experts for Megan's case, but not to worry because she had some in Kansas.

Megan told me months before her trial that Ms. Gish would be contacting me to prepare me to testify at trial. Ms. Gish never contacted me before the trial to explain my role and testimony.

At the trial, the Judge required witnesses to wait outside of the courtroom. Ms. Gish called me as a witness during the latter part of the trial. I had no clue what Ms. Gish or the prosecutor was going to ask me, which frustrated me. When I told Megan about this she said Ms. Gish didn't even prepare her for trial. Megan said that right before she had testified Ms. Gish told her to forget about her explanations of her boy's injuries and to just claim someone else must have abused him.

Further, affiant saith not.

BEN HALL

Subscribed and sworn to me on this 21st day of January, 2015.

(SEAL)

ELISE MURLIN NOTARY #11006214 EXP. 07/12/15 PUBLIC STATE OF OKLAHOMA

NOTARY PUBLIC

STATE OF OKLAHOMA)
) ss
COUNTY OF OKLAHOMA)

AFFIDAVIT OF BILL J. BUFFINGTON, M.D.

I, Bill J. Buffington, M.D., being of legal age and upon my oath, do solemnly state:

I am a medical doctor licensed in the State of Oklahoma, with over twenty-five years' experience in emergency, family, and occupational medicine. For the past eighteen years, I have treated children and adult patients in the Edmond, Oklahoma area.

I am familiar with Megan Hammers and her two minor children, as I used to be their primary care physician.

During the time that I treated Ms. Hammers' children, I never saw any signs of abuse. I treated Ms. Hammers' older child for roughly one year, and her infant from birth to six months of age. Ms. Hammers was diligent as a mother, very caring, and pleasant to be around. She was accustomed to being around children, having helped run the local daycare Kids, Inc. I am very confident that Ms. Hammers knew how to care for her children, and she seemed to have been doing a good job.

As I mentioned, I also treated Ms. Hammers, individually. Ms. Hammers suffered from an appreciable amount of documented pain due to past musculoskeletal injuries. I did not think Ms. Hammers was ever seeking drugs; she had valid injuries.

Although Ms. Hammers required a lot of narcotic pain medication, she always stayed within the guidelines that I had established. In my experience, patients being treated for pain management typically build up a tolerance over time to the medication and require increased amounts to combat the pain. Throughout the course of treatment, Ms. Hammers never exhibited adverse physical or mental symptoms from the medication.

I am aware of the criminal action that was brought against Ms. Hammers in the District Court of Oklahoma County, Case No. CF-2012-578.

I was not contacted by Ms. Renee Gish, or any attorney representing Ms. Hammers prior to her trial. The only attorneys that I recall ever having contacted me prior Ms. Hammers' trial to discuss were the district attorneys. I was not surprised the district attorneys never called me to testify at trial, as I really had nothing to offer from their perspective. I was, however, a bit surprised that I was not called to testify on Ms. Hammers' behalf.

Further, affiant saith not.

BILL J. BUFFINGTON, M.D.

Subscribed and sworn to me on this 16th day of December, 2014.

NOTARY PUBLIC

(SEAL)